

### REMARKS

Applicants respectfully request entry of this Amendment, and reconsideration of the application in light of the Amendment and the following remarks.

Upon entry of this Amendment, claims 1-43 are pending in the application. Original claims 1-41 are amended herein. Claims 42-43 are newly added.

Applicants gratefully acknowledge the Examiner's indicating that claims 10-11, 19-21, 33-34, and 36-39 contain allowable subject matter. Based on the remarks that follow, Applicants believe that all of the claims of the application are now in condition for allowance, and allowance of the remaining claims is respectfully requested.

Claims 1 and 24 have been amended to remove the reference to the polyolefin having a heat of fusion of 0 to 10 calories/gram, this description not being seen necessary for patentability. The composition claims have been amended to recite a primer composition, support for which can be found, for example, at page 1, lines 11-12, and throughout the specification. Claims 42-43 are newly presented herein, and recite that the pendant unsaturated groups are provided on the modified polyolefin in an amount sufficient to polymerize the modified polyolefin upon exposure to ultraviolet radiation, support for which can be found, for example, at page 4, lines 9-18, and throughout the specification. Applicants respectfully submit that the changes introduce no new matter, and respectfully request entry and favorable consideration of the changes.

#### *Claim objections*

Claims 23 and 41 were objected to in the Office Action as being the same claim. However, Applicants note that claim 23 depends from claim 1, while claim 41 depends from claim 24. Applicants note also that claims 1 and 24 claim different, though similar,

subject matter. Applicants therefore submit that the objection is improper, and request that the objection be withdrawn.

*Rejections under 35 U.S.C. §112*

Claims 18 and 35 were rejected in the Office Action under 35 U.S.C. § 112, second paragraph, as being indefinite, it being asserted that it was unclear what component (b) comprises. Applicants respectfully traverse the rejection and request reconsideration.

Applicants confirm the Examiner's understanding, as claims 18 and 35 provide, that component (b) is separate from and in addition to component (a) and optional component (c). Applicants also confirm the Examiner's understanding that suitable adhesives according to the cited claims would include tackifying resins, such as are commonly described in the art of coating compositions as adhesives.

Although adhesives such as tackifying resins may in some instances functionally cross-link, as the Examiner suggests, they are generally known in the coatings art as adhesives rather than as cross-linking agents. Independent claims 1 (from which claim 18 depends) and 24 (from which claim 35 depend) would, of course, encompass primer compositions containing cross-linking agents, as would all of the claims of the application, but art-recognized "cross-linking agents" are not intended to be encompassed by the term "adhesive" in claims 18 and 35.

Similarly, the Examiner cites adhesion-promoting agents such as silane compounds as possible adhesives, but these agents likewise are not generally known in the art of coating compositions as adhesives, but rather as adhesion-promoting agents. While all of the claims of the application encompass the use of silane compounds, the term "adhesive" in claims 18 and 35 is not intended to refer to such compounds.

Applicants respectfully submit that the term "adhesive" is a well-known term in the art of coating compositions, and does not render claims 18 and 35 indefinite. Applicants therefore respectfully request that the rejection to claims 18 and 35 be withdrawn.

*Rejections under 35 U.S.C. §102/103*

Claims 1-2, 4-5, 12-17, 23 and 40 were rejected in the Office Action as being anticipated by, or obvious in view of, Kanetou et al., U.S. Pat. No. 5,728,767. Applicants respectfully traverse this rejection and request reconsideration.

It was asserted in the Office Action that Kanetou et al. teaches aqueous resin compositions that comprise a modified polyolefin polymer, one or more (meth) acrylic monomers, a surfactant, a polymerization initiator, water, crosslinking components, and basic components. Applicants respectfully submit, however, that this assertion requires the picking and choosing of certain reactants and intermediates, while ignoring others, and that although the general disclosure of Kanetou et al. cited in the Office Action includes reactants that are useful according to the invention, the processes described differ significantly from those of the present application, as do the coating compositions themselves.

For example, the polymer described at column 7, lines 10-17 is an intermediate that is further reacted via a free radical mechanism in an emulsion polymerization, as further discussed below. There is no teaching or suggestion that such an intermediate would be useful in a primer composition. Similarly, the (meth) acrylic monomers cited at column 8, line 65 *et seq.* are not added to a coating composition, as such, to be reacted during curing with a polyolefin having pendant unsaturated groups. Rather, they are reactants that are polymerized during an emulsion polymerization process to obtain the polymer of the coating compositions described, as discussed below. Likewise, the cited surfactants are not provided to disperse a polyolefin having pendant unsaturated groups in a primer composition, but rather are provided to disperse a polyolefin/monomer mixture prior to an emulsion polymerization process. Similarly, the cited polymerization

initiators are not taught to be added to a coating composition to effect cure once the composition is applied to a substrate, but rather are intended to promote a free radical reaction during an emulsion polymerization process.

Thus, Examples 1-8 of Kanetou et al. describe emulsion polymerization processes in which ethylenically-unsaturated monomers (such as the 2-ethylhexyl methacrylate and methacrylic acid of Example 1) are combined with modified polyolefins (such as the maleic anhydride grafted polyolefin of Example 1) to obtain a monomer/polyolefin mixture. This mixture is emulsified with surfactant, and the mixture is then emulsion-polymerized (with water as the continuous phase) via a free radical-induced addition reaction. Applicants respectfully advise that such an addition reaction would result in the monomers losing their unsaturation. That is, the resulting polymer would not have pendant unsaturated groups, as provided in independent claims 1 and 24 of the present application.

In contrast to Kanetou et al., the claimed invention provides a primer composition containing a modified polyolefin composition having pendant unsaturated groups, the modified polyolefin comprising the reaction product of a functionalized polyolefin and one or more ethylenically unsaturated compounds having a functional group reactive with the functional group on the polyolefin. Because the ethylenically unsaturated compounds have a functional group that is reactive with the functional group on the polyolefin, the two may be reacted, for example via an esterification reaction between an anhydride of the polyolefin with a corresponding hydroxyl of the unsaturated compound, so that the unsaturation survives.

The primer compositions according to the claimed invention are thus neither disclosed nor fairly suggested by Kanetou et al., nor would the processes described in that patent result in the primer compositions according to the claimed invention. Applicants therefore respectfully submit that the rejection with respect to 1-2, 4-5, 12-17, 23 and 40 is overcome, and respectfully request that the rejection be withdrawn.

*Rejections under 35 U.S.C. §103*

Claims 3, 6-9, 22, 26, and 29-32 were rejected in the Office Action under 35 U.S.C. §103(a) as being unpatentable over Shiomi et al., U.S. Pat. No. 4,229,754, in view of Kanetou et al., U.S. Pat. No. 5,728,767, and a teaching reference, Odian's Principles of Polymerization. Applicants respectfully traverse the rejection and request reconsideration.

It was asserted in the Office Action that Shiomi et al. teaches surface treating agents comprising a modified polyolefin polymer prepared by graft polymerization with maleic acid or anhydride in the presence of a peroxide initiator. It was acknowledged that Shiomi et al. does not expressly modify the polyolefin with an ethylenically unsaturated component, but it was asserted that Kanetou et al. teaches modifying carboxyl functionalized polyolefins with hydroxyalkyl (meth) acrylates. It was asserted on this basis that it would have been obvious to modify the carboxyl-containing polyolefins of Shiomi et al. with the hydroxyalkyl (meth) acrylates of Kanetou et al., to obtain a primer composition with improved performance, such as adhesion, by insuring uniform cross-linking. Applicants respectfully submit that the references have been improperly combined, that the asserted motivation to combine the references could only be derived from the Applicants' own disclosure, and that even if the references were properly combined, the primer compositions of the claimed invention would not thereby be obtained.

Shiomi et al. teaches an organic solvent solution of a polymer resulting from the graft polymerization of a propylene-ethylene copolymer with maleic acid or anhydride. The resulting surface treating solution is used as such, there being no indication that the polymer described might be dispersed in water, nor how it might be so dispersed, or why one might wish to do so. Nor is there any indication in the patent that further modifying the polymer might be useful for any purpose, nor that any cross-linking occurring upon application of the agent to a substrate would improve the adhesive properties of the resulting film. There being no suggestion in Shiomi et al. of any chain

reaction polymerization occurring upon application to a substrate, the Oadian reference to photoinitiators is not seen to be relevant to the Shiomi et al. disclosure.

Kanetou et al. teaches an emulsion polymerization process in which a modified polyolefin is reacted with unsaturated monomers, with water as the continuous phase, to obtain an emulsion polymer. The resulting emulsion polymer would be expected to cure simply by coalescing, there being no suggestion that such a composition would cure by a polymerization process. Although the Office Action asserts that Kanetou et al. teaches modifying carboxyl-containing polyolefins for more uniform cross-linking, Kanetou et al. likewise does not suggest cross-linking during curing. Any cross-linking that would occur according to Kanetou et al. would necessarily take place during the emulsion polymerization process. Indeed, the motivation to provide a primer composition that cross-links during curing could only come from Applicants's own disclosure, since neither Shiomi et al. nor Kanetou et al. teach cross-linking during curing, nor would their compositions be expected to do so. The Oadian reference to photoinitiators therefore does not appear to be relevant to the teachings of Kanetou et al., nor does it appear to be a motivation to combine the references as the Examiner has combined them. Because the references have been improperly combined, the motivation to combine references being derived from the Applicants' own disclosure, and because the primer compositions of the claimed invention would not be obtained even if the references were combined, Applicants respectfully submit that the rejection of claims 3, 6-9, 22, 26, and 29-32 is overcome, and respectfully request that the rejection be withdrawn.



In summary, applicant believes the application to be in condition for allowance. Accordingly, the Examiner is respectfully requested to reconsider the rejection(s), enter the above amendment, remove all rejections, and pass the application to issuance.

The Commissioner is hereby authorized to charge any additional fees that may be required, or to credit any overpayment, to Deposit Account No. 05-0221.

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CERTIFICATE OF MAILING UNDER 37 CFR 1.8(a)

I hereby certify that this paper (along with any referred to as being attached or enclosed) is being deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to: Commissioner for Patents, P. O. Box 1450, Alexandria, VA 22313-1450.

Jo Ann White  
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January 26, 2004  
Date